



Research on the Aftermath of Earthquakes in Japan: A Selective Bibliography

The earthquake and tsunami that struck northern Japan on 10 March 2011 may be the largest disaster to strike that country since the Second World War, but it is not entirely unprecedented. Two major earthquakes, the Kobe earthquake of 1995 (also known as the Hanshin-Awaji earthquake) and the Niigata earthquake of 2004, caused considerable loss of life, property damage, and psychological suffering. There is a substantial literature on their mental health sequelae, and it is to be hoped that the lessons learned from those disasters can help to alleviate the suffering of survivors of this year's earthquake and tsunami. This bibliography lists those studies that seem most useful in understanding the present disaster and its consequences.

Kobe Earthquake

Asukai, N., Hirohata, S., Kato, H., & Konishi, T. (2003). **Psychometric properties of the Japanese-language version of the Clinician-Administered PTSD Scale for DSM-IV.** [in Japanese] *Japanese Journal of Traumatic Stress, 1*, 47-53. *Objective:* Many empirical studies around the world make use of the well-validated diagnostic tool known as CAPS (Clinician-Administered PTSD Scale for DSM-IV) in conducting structured clinical interviews to assess PTSD. The aim of the present study was to investigate the reliability and validity of the Japanese-language version of CAPS. *Methods:* We carried out three studies in which two raters (clinical psychologists and/or counselors) assessed participating adults. One rater conducted the CAPS interview while both raters independently assessed the scores. In Study 1, the participants were 21 factory workers (18 male, 3 female); in Study 2, 14 female clients; and in Study 3, 13 survivors (5 male, 8 female) of the Hanshin-Awaji Earthquake. In addition, a psychiatrist made a SCID-PTSD diagnosis for each participant in Study 1. *Results:* Kappa coefficients in evaluating the concurrence of CAPS-PTSD, partial PTSD, or non-PTSD diagnoses between the two raters indicated good inter-rater reliability: .88 in Study 1; .86 in Study 2; and .93 in Study 3. In addition, kappa coefficients in evaluating the concurrence of CAPS (two raters) and SCID-PTSD diagnoses in Study 1 were .82 and .87. These values indicate good concurrent validity of the scale. In aggregating the score of all 48 samples, the correlation coefficients of the scores in 17 PTSD symptom items between the two raters were very high: .84-.99 for Frequency items; .89-.99 for Intensity items; and .87-.99 for Frequency + Intensity items. In addition, the correlation coefficient of the CAPS total score between the two raters was very high (.99). The Cronbach's coefficient alpha in cluster B, C, D symptoms were .87, .83, and .85, respectively, which also indicated good internal consistency. *Implications:* Evidence shown by our results included good inter-rater reliability and validity of the Japanese-language version of CAPS. It can therefore be regarded as a useful diagnostic instrument for PTSD research in Japan. [Adapted from Author Abstract]

Asukai, N., Kato, H., Kawamura, N., Kim, Y., Yamamoto, K., Kishimoto, J., et al. (2002). **Reliability and validity of the Japanese-language version of the Impact of Event Scale-Revised (IES-R-J): Four studies of different traumatic events.** *Journal of Nervous and Mental Disease, 190*, 175-182. doi: [10.1097/00005053-200203000-00006](https://doi.org/10.1097/00005053-200203000-00006). The authors developed the Japanese-language version of the Impact of Event Scale-Revised (IES-R-J) and investigated its reliability and validity in four different groups: workers with lifetime mixed traumatic events, survivors of an arsenic poisoning case, survivors of the Hanshin-Awaji earthquake, and survivors of the Tokyo Metro sarin attack. Evidence includes retest reliability and internal consistency of the IES-R-J. PTSD and partial PTSD cases indicated significantly higher scores than non-PTSD cases. The IES-R-J can be a useful self-rating diagnostic instrument particularly for survivors with PTSD symptoms as a clinical concern (PTSD + partial PTSD) by using a 24/25 cutoff in total score. In analysis of scale structure, the majority of

intrusion and hyperarousal items were subsumed under the same cluster, whereas avoidance items made up a separate cluster. Female patients indicated higher scores than male patients. A negative weak correlation between age and the score was found only among female earthquake survivors. The IES-R-J can be used as a validated instrument in future international comparative research. [Author Abstract]

Asukai, N., & Miyake, Y. (1998). **Contributing factors to post-disaster stress symptoms among office workers who survived the 1995 Hanshin-Awaji earthquake.** [in Japanese] *Seishin Igaku = Clinical Psychiatry*, 40, 889-895. A total of 4645 white-collar employees completed questionnaires regarding PTSD symptoms and degree of damage caused by the disaster 5 months after the Hanshin-Awaji earthquake (1995). 725 completed questionnaires regarding personal loss, injury, physical symptoms, depressive symptoms (SDS), psychological symptoms (IES, GHQ 30) and Personality traits (MPI) 16 months after the earthquake. A dose-response relationship between degree of damage and PTSD symptoms was found 5 months after the disaster. The same pattern was also true between personal loss and PTSD symptoms 16 months after the disaster. Those who scored high on PTSD also reported significantly more depressive symptoms, physical symptoms, and high scores on GHQ30 than those who reported few PTSD symptoms. Tendency of neuroticism was associated with high score on IES. [Translated and Adapted from Text]

Fujii, S., Kato, H., & Maeda, K. (2007). **A simple interview-format screening measure for disaster mental health: an instrument newly developed after the 1995 Great Hanshin Earthquake in Japan—the Screening Questionnaire for Disaster Mental Health (SQD).** *Kobe Journal of Medical Sciences*, 53, 375-385.

Psychological intervention after a large-scale disaster requires an efficient and practical measure. Using self-reporting scale imposes certain limitations, especially when dealing with the elderly. It is also required that non-experts in mental health should be able to use the screening device, so that it can be easily incorporated into any local level post-disaster health service. To satisfy such requirements, we developed a simple interview-format measure, the Screening Questionnaire for Disaster Mental Health (SQD), which screens for PTSD and depression. In this article, its validity and usefulness was analyzed. Data were obtained from 68 individuals living in reconstruction housing five years after the 1995 Great Hanshin Earthquake. Applying the Clinician Administered PTSD Scale (CAPS) and the Structured Clinical Interview for DSM-III-R Major Depression Section (SCID) as gold standards, the areas under the Receiver Operating Characteristic curves (ROC-AUC) and stratum-specific likelihood ratios (SSLR) as statistical indices were calculated. The ROC-AUC was 0.91 (95% CI: 0.83-0.99) for diagnosing PTSD, and 0.94 (0.88-1.01) for diagnosing depression. Three strata for PTSD and 2 strata for depression were obtained, and SSLR for each stratum was 0.10 (95% CI: 0.02-0.45), 1.05 (0.37-3.00), 9.64 (3.77-24.69) for PTSD, and 0.3 (0.1-1.0), 7.8 (3.2-18.7) for depression. The results showed that this screening measure had good validity, especially for PTSD. [Author Abstract]

Fukuda, S., Morimoto, K., Mure, K., & Maruyama, S. (2000). **Effect of the Hanshin-Awaji earthquake on posttraumatic stress, lifestyle changes, and cortisol levels of victims.** *Archives of Environmental Health*, 55, 121-125. doi: [10.1080/00039890009603398](https://doi.org/10.1080/00039890009603398). In 1995, the Hanshin-Awaji area in Japan was damaged severely by a major earthquake. In this study, the authors administered questionnaires and obtained blood samples to analyze the relationships among lifestyle, psychological stress, and plasma cortisol levels of victims. The authors questioned 107 male inhabitants of Awaji Island about their lifestyles before and after the earthquake, presence of any symptoms of PTSD, and demographic variables. Plasma cortisol levels were determined with enzyme immunoassay. Cortisol level was correlated strongly with change in lifestyle. The highest cortisol levels were found in the group characterized by a high PTSD score and by a very profound lifestyle change. This group also contained the highest percentage of subjects who had poor health. In summary, the psychological stress induced by the Hanshin-Awaji earthquake was associated with mean cortisol level; however, this relationship was affected by adjustment of lifestyle. [Author Abstract]

Inoue-Sakurai, C., Maruyama, S., & Morimoto, K. (2000). **Posttraumatic stress and lifestyles are associated with natural killer cell activity in victims of the Hanshin-Awaji Earthquake in Japan.** *Preventive Medicine*, 31, 467-473. doi: [10.1006/pmed.2000.0744](https://doi.org/10.1006/pmed.2000.0744). *Background:* The relationships among mental health status, lifestyle, and natural killer (NK) cell activity, which plays important roles in the immune surveillance of tumors and viral infections, were investigated in victims of the Hanshin-Awaji Earthquake. *Methods:* About 1 and 1/3 years after the earthquake, 155 male workers who experienced the event were administered questionnaires concerning their unhealthy mental status, such as symptoms of PTSD, lifestyles, and demographic variables. Peripheral blood was taken from all of them to measure NK cell activity. *Results:* Subjects who had PTSD symptoms showed lower NK cell activity than those without symptoms. Subjects with positive lifestyles showed higher NK cell activity than those with poor or moderate lifestyles. When subjects were divided into four groups by lifestyle and PTSD symptoms, subjects with positive lifestyles and few or no PTSD symptoms showed the highest NK cell activity among the four groups. The other three groups were subjects with positive lifestyles but many PTSD symptoms; subjects with poor or moderate lifestyles and many PTSD symptoms; and subjects with poor or moderate lifestyles and few or no PTSD symptoms. *Conclusion:* PTSD symptoms and lifestyles were associated with NK cell activity in the earthquake victims. [Author Abstract]

Joh, H. (1997). **Disaster stress of the 1995 Kobe earthquake.** *Psychologia*, 40, 192-200. The impact of the 1995 Kobe earthquake was examined. In this study, mental and physical stress disorders among 748 disaster victims (aged 4-88 years) in the first month after the earthquake were investigated and analyzed according to refuge conditions, gender, generation and damage degrees of house. The results showed that: (1) people sheltered in public or private shelters felt more severe stress than people sheltered in other places, (2) women in their sixties felt more severe mental and physical stress than other people, (3) the groups of completely collapsed and partially collapsed had higher stress degrees than the group of needing repairs, meaning that losing a house is a great mental burden. [Author Abstract]

Joh, H., & Obanawa, N. (1995). **Some aspects of disaster stress under the Great Hanshin Earthquake.** [in Japanese] *Japanese Journal of Experimental Social Psychology*, 35, 232-242. The impact of the Great Hanshin Earthquake of 1995 was examined. In Study 1, mental and physical stress disorders among 748 disaster victims (4-88 years) in the first month after the earthquake were investigated, and analyzed according to shelter location, sex, and age. In Study 2, mental responses of 1005 children (3-5 years) and their mothers' stress levels in the first three months after the earthquake were investigated, and the correlation between the children's responses and their mothers' stress levels was examined. In Study 1, the results showed that: (1) people sheltering in public or private refuges felt more severe stress than people sheltering in other places, (2) analyzing their mental and physical stress levels according to sex and age, women in their sixties felt more severe stress than other people. In Study 2, the results showed that: (1) children and mothers who suffered considerable material damage felt strong mental and physical stress, (2) according to characteristics of children's disorders, mothers' stress levels were different. [Author Abstract]

Kato, Hiroshi. (1998). **Posttraumatic symptoms among victims of the great Hanshin-Awaji earthquake in Japan.** *Psychiatry and Clinical Neurosciences*, 52, S59-S65. doi: [10.1046/j.1440-1819.1998.0520s5S59.x](https://doi.org/10.1046/j.1440-1819.1998.0520s5S59.x). Two comparative studies conducted in early and reconstruction stages following the 1995 Hanshin-Awaji earthquake in Japan are presented. In the first study, posttraumatic symptoms among the younger evacuees (< 60 years) were compared with the symptoms among the elderly evacuees (> 60 years) in the same shelter. In the first study, though most of the symptoms remained unchanged among the younger subjects from the time of the third-week assessment to that of the eighth week, the symptoms improved among the elderly subjects. In the second study, the psychological effects of those who were living in temporary housing and those who were not were compared

during the reconstruction stage. The study demonstrated that the temporary housing residents had high exposure to the traumatic event, poor socioeconomic status, and various secondary stressors. The result of these factors is that they have a higher chance of facing various types of mental health problems. By examining the data obtained from these studies, the characteristics of psychological distress and coping among survivors of different stages after the earthquake, and matters of future concern relating to the kind of mental health care required at each stage, are discussed. [Author Abstract]

Kato, H., & Asukai, N. (2004). **Psychological effects of rescue workers: A large scale survey of fire fighters following the 1995 Kobe earthquake.** [in Japanese] *Japanese Journal of Traumatic Stress*, 2, 51-59. In order to investigate the psychological effect [experienced by] rescue workers, we examined the fire fighters following the 1995 Kobe earthquake. PTSD symptoms were assessed 13 months after the earthquake using the Impact of Event Scale (IES). Total scores of IES among the fire fighters whose original workplace was in the affected area were significantly higher than those who were sent from outside the disaster area. In addition, logistic regression analysis revealed that the sense of subjective distress that had been aroused by being subjected to blame and criticism from earthquake victims had elevated IES score, as well as being a victim themselves and/or exposure to tragic scene. We suggest taking multidimensional factors into consideration and coming up with comprehensive measures in the study of mental health care system for rescue workers. [Author Abstract]

Kato, H., Asukai, N., Miyake, Y., Minakawa, K., & Nishiyama, A. (1996). **Post-traumatic symptoms among younger and elderly evacuees in the early stages following the 1995 Hanshin-Awaji earthquake in Japan.** *Acta Psychiatrica Scandinavica*, 93, 477-481. doi: [10.1111/j.1600-0447.1996.tb10680.x](https://doi.org/10.1111/j.1600-0447.1996.tb10680.x). We assessed the frequency of short-term, post-traumatic symptoms among evacuees of the Hanshin-Awaji earthquake. A total of 67 younger subjects (under 60 years) and 75 elderly subjects (60 years or above) were interviewed during the third week after the earthquake, and 50 and 73 subjects, respectively, were interviewed during the eighth week. All subjects were assessed using the Post-Traumatic Symptom Scale. During the first assessment, subjects from both age groups experienced sleep disturbances, depression, hypersensitivity and irritability. During the second assessment, the percentage of younger subjects experiencing symptoms did not decrease, while elderly subjects showed a significant decrease in 8 of 10 symptoms. This may have been due to such factors as decreased psychological stress, extensive social networks, and previous disaster experiences in the case of the elderly subjects. [Author Abstract]

Kitayama, S., Okada, Y., Takumi, T., Takada, S., Inagaki, Y., & Nakamura, H. (2000). **Psychological and physical reactions on children after the Hanshin-Awaji earthquake disaster.** *Kobe Journal of Medical Sciences*, 46, 189-200. Children who experienced the Hanshin-Awaji Earthquake Disaster were followed to ascertain how the psychological and physical reactions after this disaster changed. Changes observed in the symptoms of children at one and two years after the earthquake were compared between those who had lived in severely damaged area (level 7 on the Japan Meteorological Agency intensity scale) and those who had lived in mildly damaged area (less than 5 on the same scale). The survey was conducted using a questionnaire filled out by the children's parents. Two years after the earthquake, the children had returned to normal in terms of their physical conditions, even in the severely damaged area. However, symptoms of PTSD such as persistent reexperiencing, persistent avoidance, and increased arousal were significantly more frequently found among children from the severely damaged area than among those from the mildly damaged area. To evaluate the psychological and physical reactions after the disaster is very important in order to support the children when large-scale disasters occur. [Author Abstract]

Kwon, Y.-S., Maruyama, S., & Morimoto, K. (2001). **Life events and posttraumatic stress in Hanshin-Awaji earthquake victims.** *Environmental Health and Preventive Medicine*, 6, 97-103. doi: [10.1007/BF02897953](https://doi.org/10.1007/BF02897953).

Stress induced by disaster is experienced to varying degrees by all respondents, and is known to evoke psychophysiological reactions. In this study, we investigated the relationships between earthquake-related life events and posttraumatic stress symptoms. A total of 380 adults were surveyed one year after the 1995 Hanshin-Awaji earthquake in Japan. The questionnaire included items concerning earthquake-related life events, emotional support, and PTSD symptoms. As a result, after controlling for demographic variables, earthquake-related life events were significantly related to the grade of posttraumatic stress and its three components: re-experience, avoidance, and arousal in both male and female subjects. Male subjects who currently had lower emotional support showed higher scores of posttraumatic stress and arousal. In conclusion, a higher experience of earthquake-related life events appears to be an important risk factor for development of poor mental health status following an earthquake disaster. [Author Abstract]

Nagao, K., Okuyama, M., Miyamoto, S., & Haba, T. (1995). **Treating early mental health and post-traumatic symptoms of children in the Hanshin-Awaji earthquake.** *Acta Paediatrica Japonica*, 37, 745-754. In this article we report on the support facilities for child mental health after the earthquake in Kobe. We believe that the most important function is the ability to cope with the confused situation on-the-spot as there were no means of transport and facilities for medical treatment had been paralyzed. Establishing contact with people outside the stricken area is of great help immediately following a disaster. After the earthquake many children were psychologically confused and people were therefore concerned with mental health care, especially for their children. However, there were only a few cases of patients seeing their doctors in medical centers. They needed information booklets or case reports to refer to. Five months after the disaster, symptoms such as acute uneasiness or terror seem to be few, and severely ill patients have started to recover. There are few case reports on children who have had difficulties in adapting to educational organization such as day nurseries and elementary schools. However, recently there has been an increase in the number of bone fractures possibly due to decline in resistance. Means of dealing with child mental health are now being examined because some children are still suffering post-traumatic symptoms. In this report we analyze the rapid recognition of children's mental health problems at home, in the school and in society and examine the importance of close mother-child, family and relative relationships. [Author Abstract]

Shioyama, A., Uemoto, M., Shinfuku, N., Ide, H., Seki, W., Mori, S., et al. (2000). **The mental health of school children after the Great Hanshin-Awaji Earthquake: II, longitudinal analysis.** [in Japanese] *Seishin Shinkeigaku Zasshi = Psychiatria et Neurologia Japonica*, 102, 481-497. We conducted surveys to investigate the nature of the recovery processes and psychological reactions of children and adolescents affected by the Great Hanshin Awaji Earthquake. The investigations were carried out 4 times at 4 months, 6 months, 1 year and 2 years after the disaster. *Subjects:* About 9000 school children in the 3rd grade, the 5th grade, the 8th grade living in the disaster area. *Method:* The questionnaire consisted of 9-12 items regarding situation and behavior when the earthquake occurred, and 22 items regarding mental health condition, and was filled out in the classroom under supervision by the teacher in charge. The responses were rated from 1 to 4 depending on the frequency of the symptoms, and statistically analyzed. *Results:* By factor analysis, three factors were elicited. Factor 1 was interpreted as being related to fear and anxiety, factor 2 as related to depression and physical symptoms, and factor 3 as related to pro-social tendencies. These 3 factors were distinct and stable throughout all 4 surveys and each of them showed unique recovery processes. The mean score of factor 1 was highest at 4 months after the earthquake, and decreased as time passed. This factor shows that fear and anxiety seem to be directly related to the experience of the earthquake. According to the severity of the disaster, more severe damage brought about a higher mean score of factor 1. Furthermore, younger children and girls were more strongly affected. Each of the differences in the severity of disaster, in age, and in gender decreased as time passed. The mean score of factor 2 peaked at 6 months, and it slightly recovered after one year. However, the score at the 1st year was still higher than that of the 4th month. At two years the score returned to almost the same level as that of the 4th month. We think that factor 2, involving depressive mood and psychophysical symptoms, may be a secondary phenomenon to fear and anxiety. Other possibilities are that they may be caused by environmental changes after the disaster,

inconveniences of daily life, loss of jobs of parents, or masked by hypomanic mood which covered over the disaster area soon after the earthquake (so-called heroic phase). Older children have a greater tolerance for depressive mood and psychophysical symptoms, but those symptoms occurring in older children have a tendency to continue for a longer time. Girls are more heavily affected and need more time to recover from trauma than boys. The mean score of factor 3 showed a gradual decrease as time passed. There was no difference in the way of decrease according to the severity of disaster, age and gender. It may be natural that, since the interest in the earthquake decreased as time passed, consideration for the victims decreased. *Conclusions:* The problems of mental health of children and adolescents after the disaster may consist of at least 2 different components; "fear and anxiety," which appeared just after the disaster and decreased earlier; "depressive and psychophysical symptoms" appeared later and stayed longer. [Author Abstract]

Tanaka, M., & Takagi, O. (1997). **A study of the victims in the temporary housing built outside of the stricken disaster area of the Great Hanshin-Awaji Earthquake, I: The impact on physical and mental health of the people in the temporary housing a year after the earthquake.** [in Japanese] *Japanese Journal of Experimental Social Psychology*, 37, 76-84. In order to investigate the present state of the physical and mental health of the victims of the Great Hanshin-Awaji Earthquake, one survey was carried out on 415 victims (191 men, 224 women) who were living in temporary housing built outside of the stricken disaster area. The survey was conducted between January 20-31, 1996, approximately one year after the earthquake. 101 responses were returned which indicated the following results. As for physical problems, both men and women experienced stiff shoulders and backache. Men increased their alcohol consumption more than women. On the other hand, women experienced more specific physical effects, such as stomatitis and constipation. In terms of mental health measured by GHQ20, 50% of male victims and 78% of female victims who completed GHQ20 were categorized as in the high risk group. In general, women's physical and mental health were more severely affected than men's. [Author Abstract]

Uemoto, M., Shioyama, A., Koide, K., Honda, M., Takamiya, S., Shirakawa, K., et al. (2000). **The mental health of school children after the Great Hanshin-Awaji Earthquake: I, epidemiological study and risk factors for mental distress.** [in Japanese] *Seishin Shinkeigaku Zasshi = Psychiatria et Neurologia Japonica*, 102, 459-480. We conducted surveys to study the magnitude and nature of psychological consequences of school children affected by the Great Hanshin Awaji Earthquake, which occurred in Kobe on January 17th, 1995. It measured 7.2 in magnitude, killed more than 6000 people, and destroyed at least 170,000 buildings and houses. The investigations were carried out 4 months following of the disaster. *Subjects:* About 9000 school children in the 3rd grade, the 5th grade, the 8th grade living in the disaster areas. About 2000 children living in distant areas were also surveyed as control subjects. *Method:* The questionnaire was in a self-descriptive format and consisted of 10 items regarding situation and behavior when the earthquake occurred and 22 items about mental health condition. The responses were rated from 1 to 4 depending on the frequency of the symptoms, and statistically analyzed. *Result:* By factor analysis, three factors were elicited. Factor 1 was interpreted as being related to fear and anxiety, factor 2 as related to depression and physical symptoms, and factor 3 as related to pro-social tendencies. The highest mean score of factor 1 was associated with the most heavily damaged areas. Less severe damage was associated with a lower mean score, and the control areas showed the lowest score. These results show that the children in the damaged areas were strongly affected. Factor 2 shows a different pattern from factor 1. The score of heavily damaged areas is conspicuously high. However, the differences between the other areas were not significant, the control areas had scores almost the same as those of the slightly damaged areas. These results may mean that in less damaged areas than in more heavily damaged areas, there was a more remarkable "heroic phase" after the disaster, which hid depressive moods and lasted longer than in the more severely damaged areas, where people had to face stern reality in the early stages. Factor 3 shows the reverse pattern of factor 2. The slightly damaged areas had the highest score. This result also shows the influence of the "heroic stage". As for the mean scores of factors 1 and 2, younger children showed higher scores. There were no differences in the scores of factor 3 between students in the 3rd grade and 5th grade. The score of the students in the 8th grade was the lowest

among all. It can be seen that adolescents generally lessen their consideration for society as a developmental stage in their growth. All of the mean scores of factors 1, 2 and 3 of females are higher than those of males. In the heavily damaged areas, factor 1 is associated with an experience of being rescued and injuries of the children themselves. Factor 2 is associated with injuries of the children themselves. In the moderately damaged areas, factors 1 and 2 are associated with injuries of the children themselves and taking in victims in the childrens' homes. In the slightly damaged areas, factor 1 is associated with injuries within families. Factor 2 is associated with injuries within families and taking in victims in the childrens' homes. *Conclusions:* School-aged children exposed to a high-magnitude natural disaster had 3 categories of emotions: "fear and anxiety," "depressive mood and physical symptoms," and "pro-social tendency." The severity of disaster, younger age, and female gender were high risk factors for distress. In the heavily damaged areas, an experience of being rescued and injuries of the children themselves had a great influence on the mental health of children. In lesser damaged areas, taking in victims in the childrens' homes and injuries within families had an influence. [Author Abstract]

Niigata Earthquake

Endo, T., Shioiri, T., Someya, T., Toyabe, S., & Akazawa, K. (2007). **Parental mental health affects behavioral changes in children following a devastating disaster: A community survey after the 2004 Niigata-Chuetsu earthquake [letter]**. *General Hospital Psychiatry*, 29, 175-176. doi: [10.1016/j.genhosppsych.2006.09.006](https://doi.org/10.1016/j.genhosppsych.2006.09.006). Previous research has shown that psychosocial stressors and parental mental health status are related to the development of PTSD in children and adolescents after an earthquake. To investigate effects of the earthquake on children's behavior, we examined children's behavioral changes after the 2004 Niigata-Chuetsu earthquake through parental observations using questionnaires. [Adapted from Text]

Kuwabara, H., Shioiri, T., Toyabe, S., Kawamura, T., Koizumi, M., Ito-Sawamura, M., et al. (2008). **Factors impacting on psychological distress and recovery after the 2004 Niigata-Chuetsu earthquake, Japan: Community-based study**. *Psychiatry and Clinical Neurosciences* 62, 503-507. doi: [10.1111/j.1440-1819.2008.01842.x](https://doi.org/10.1111/j.1440-1819.2008.01842.x). *Aim:* This study was undertaken 5 months after the 2004 Niigata-Chuetsu earthquake in Japan to assess factors that impacted on psychological distress and its recovery. *Methods:* 3026 adult victims who lived in temporary shelter and in seriously damaged areas were evaluated by questionnaire. The questionnaire queried subject profile, degree of house damage, health status, and psychological distress using a 5-point scale before, immediately, and 5 months after the earthquake. *Results:* Immediately after the earthquake, 59.3% of the subjects had psychological distress. At 5 months after the earthquake, however, this percentage decreased to 21.8%. The psychological distress immediately after the earthquake was significantly serious in victims who: (i) were female; (ii) felt stronger fear of the earthquake and the aftershocks; (iii) lived at home or office after the earthquake; and (iv) were injured due to the earthquake or suffered from sickness after the earthquake. In contrast, the factors impairing psychological recovery 5 months after the earthquake were as follows: (i) being with unfamiliar member(s) during the night after the earthquake; (ii) serious house damage; (iii) living in temporary shelter or at a relative's home after the earthquake; and (iv) physical illness after the earthquake. *Conclusion:* Despite differences between disasters, these results were consistent with those in some previous studies and may be useful for long-term mental care support. [Author Abstract]

NOTE: The PILOTS database indexes literature on the psychological consequences of major disasters under general descriptors (such as Earthquakes, Hurricanes, etc.) as well as under a standard name for each particular disaster. This enables searchers to identify all the literature published on a specific incident. The two Japanese earthquakes are indexed under "Kobe Earthquake (1995)" and "Niigata Earthquake (2004)", and these descriptors may be searched in the PILOTS Database to find additional literature on them:

www.ptsd.va.gov/professional/pilots-database/pilots-db.asp